B. *Determine your expected (and observed) values*

- If the null hypothesis is true, and the TTX and normal nerve cells are ~~submitted in~~ submerged the same Na+ solution, how many Na+ ions total would you expect to enter the TTX vs. normal nerve cells? (Note: According to the data table on the first page, there are 366 Na+ ions available to enter the nerve cells.)

$\frac{366}{2} = 183$

EXPECTED # of Na+ ions entering TTX Nerve Cells	EXPECTED # of Na+ ions entering normal nerve cells
183	183

- Note, your observed values represent the data actually collected during the experiment. Over the five trials conducted, how many Na+ ions total entered the TTX nerve cells vs. normal nerve cells?

OBSERVED # of Na+ ions entering TTX Nerve Cells	OBSERVED # of Na+ ions entering normal nerve cells
35	331

C. *Calculate* X^2

- The formula is: $X^2 = \frac{(o-e)^2}{e}$
- Where o = observed value, e = expected value, and $\sum$ = the sum of
- So you would need to calculate $\frac{(o-e)^2}{e}$ separately for each data set (ex: TTX nerve cells vs. normal nerve cells) and then add the results together

(Nearest whole #)

Data Set	o	e	$\frac{(o-e)^2}{e}$
TTX Nerve Cells	35	183	$\frac{(35-183)^2}{183} = 120$
Normal Nerve Cells	331	183	$\frac{(331-183)^2}{183} = 120$
		X^2 (sum of all values from the last column together)	240

D. *You will also need to know the degrees of freedom.*

- This is calculated using the formula (n-1), where n = the number of data sets.

How many degrees of freedom do you have for this experiment? 2-1 = 1

E. *Compare the X^2 value against a table of critical numbers.*

- On the table to the right, refer to the row that corresponds to the correct number of degrees of freedom for your data set
- Look up the critical number at the p = 0.05 level. "p" stands for probability

critical # = 3.84

	Probability				
Degrees of Freedom	0.9	0.5	0.1	0.05	0.01
1	0.02	0.46	2.71	3.84	6.64
2	0.21	1.39	4.61	5.99	9.21
3	0.58	2.37	6.25	7.82	11.35
4	1.06	3.36	7.78	9.49	13.28
5	1.61	4.35	9.24	11.07	15.09